

*Washington State*  
**2004**  
**SEXUALLY**  
**TRANSMITED**  
**DISEASE**  
**MORBIDITY**



Infectious Disease & Reproductive Health:  
STD/TB Services and Assessment Unit

*Washington State*  
**2004**  
**SEXUALLY**  
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**DISEASE**  
**MORBIDITY**



For more information or  
Additional copies of this report contact:

Infectious Disease and Reproductive Health  
STD/TB Services  
NewMarket Industrial Campus  
7211 Cleanwater Lane, Building 14  
P.O. Box 47842  
Olympia, WA 98504-7842

(360) 236-3460  
FAX: (360) 236-3470  
<http://www.doh.wa.gov/cfh/STD/morbidity.htm>

Mary Selecky  
Secretary of Health

**Sexually Transmitted Disease Morbidity ~ 2004**  
**Washington State**  
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## **EXECUTIVE SUMMARY**

The 2004 annual Sexually Transmitted Disease (STD) summary includes morbidity data and incidence rates for Washington State's legally reportable STDs. These include chlamydia, gonorrhea, syphilis, herpes simplex-initial genital infection, neonatal herpes infection, chancroid, lymphogranuloma venereum (LGV) and granuloma inguinale (GI). Sexually transmitted diseases are the most commonly reported communicable diseases in Washington State and comprise more than 70 percent of all notifiable conditions reported to the Department of Health annually.

### Chlamydia

In 2004, chlamydia continued to be the most commonly reported STD in Washington State. Reported cases totaled 17,635, yielding a statewide incidence rate of 285.9 per 100,000 persons. Females continue to be selectively tested more frequently and, consequently, diagnosed at a significantly higher rate than males. The statewide chlamydia incidence rate for females was 414.6 per 100,000, compared to an incidence rate for males of 156.2 per 100,000. Chlamydia cases reported and incidence rates increased in calendar year 2004 by 12.4% and 11.4% respectively over those observed in 2003. This rate of increase is consistent with trends observed over the last 8 years and sharply highlights the continuing need for providers and the public health community to increase screening among those at risk, enhance partner treatment for those infected and to provide medically accurate information on the transmission, prevention and treatment of sexually transmitted diseases for all sexually active persons.

### Gonorrhea

In 2004, reported gonorrhea cases increased slightly to 2,810 from the 2,754 cases reported in 2003. The statewide gonorrhea incidence rate was 45.5 per 100,000 persons in 2004, compared to 45.2 per 100,000 observed in 2003. An increase in the population-based rate of 0.6% from 2003 does not represent a statistically significant difference in incidence between 2003 and 2004. The female gonorrhea rate in 2004 was 39.7 per 100,000 and the male gonorrhea rate was 51.5 per 100,000. The male-to-female gonorrhea case ratio in 2004 was 1.28 to 1, a slight decrease from 2003. This ratio provides continuing evidence of high levels of gonorrhea incidence among men who have sex with men (MSM).

### Syphilis

Primary, secondary, and early latent cases of syphilis totaled 201 in 2004, a significant increase in cases from 2003. Of the 201 early syphilis cases, 162 (80.6%) were reported from King County. The statewide primary and secondary (P & S) syphilis rate is 2.4 per 100,000 in 2004, an increase of 84% from 2003. When cases of late latent/late syphilis are included in this calculation, the statewide syphilis rate has increased to 5.4 per 100,000, a clearly significant increase in the overall syphilis rate from that observed in 2003. No cases of congenital syphilis were reported in 2004.

### Other STDs

In 2004, 2,152 cases of initial genital herpes and 1 case of neonatal herpes (infection in infants < 1 year in age) were reported, yielding an incidence rate of 34.9 per 100,000 population. No cases of lymphogranuloma (LGV), chancroid or granuloma inguinale (GI) were identified in 2004.

## **Data Sources, Methods and Limitations**

Public and private health care providers complete confidential case reports, which are submitted to local health jurisdictions. These reports are subsequently forwarded to the Washington State Department of Health, STD/TB Services Section and are the primary data source for reported cases of sexually transmitted diseases. Chlamydia, gonorrhea, and syphilis require laboratory confirmation to be counted. Genital herpes may be reported without laboratory confirmation.

A wide variety of persons and agencies submit confidential case reports and the quality and usefulness of specific data elements can vary widely. Information on race and ethnicity are often missing and should be considered unreliable in quantitative analysis. Other data are completely reported, e.g., provider of care, age, sex and county of residence. In 1998, the confidential database that houses STD case report information was modified to be dynamic, allowing for case reports to be corrected or changed as new information on identified cases becomes available. Because of this change, the statistics in this report are for STD case information known as of February 2005.

Crude incidence rates (number of cases/population) were calculated on an annual basis per 100,000 persons. In this report the 2004 rates for all Washington counties were calculated by dividing the number of cases reported for that county in 2004 by the estimated 2004 county-specific population (estimates by the Washington State Office of Financial Management [OFM] based on the 2000 census and obtained in November of 2004). Rates were not calculated for counties reporting fewer than five cases because rates based on low case-counts are considered statistically unreliable. Crude rates are used for the purposes of this report; age-adjusted rates may mask important trends and result in over- or under-estimation of the true burden of disease.

Data Limitations - Clinically diagnosed cases of STDs (with laboratory confirmation) may be under-reported through public health surveillance systems. Presumptively diagnosed cases in some instances may not be completely reported, as is also the case with asymptomatic cases not presenting with an STD-related illness. However, clinical practice recommendations from the Centers for Disease Control and Prevention (CDC) state all bacterial STDs should receive laboratory confirmation. Depending upon diagnosing practices, completeness of reporting may vary by source of health care, particularly private versus publicly funded sources of care. Some items are known to be under-reported or misreported, e.g., race, ethnicity. Care should be exercised in interpreting these data in light of known data limitations.

## **Guidelines to Prevent Misuse of Data**

Ready access to data by persons unfamiliar with the sources or unacquainted with epidemiology and statistics may lead to misinterpretation or misrepresentation of information. This could result in inappropriate decision-making and potential misdirection of resources. The following guidelines are provided to help prevent data misuse and should always be considered when reviewing data from any source:

1. Data presented in this report represent new, incident cases of infection reported during 2004, not unique persons diagnosed with disease (e.g. a person may have repeat infections within a given year).
2. Data presented in this report are based on cases reported to local health jurisdictions and to the STD/TB Services Section, Infectious Disease & Reproductive Health, Washington State Dept. of Health. These data are representative of infections among persons receiving/seeking care for symptomatic and asymptomatic STDs, reproductive health services or other care in public or private care settings.
3. Small increases and decreases in numbers can look disproportionately large if the actual number of cases is small. For example, if two cases of chlamydia are counted in a particular county in one year and three cases are counted in the next year, this is an increase of 50%. This may sound significant, but a change of one case does not represent a significant increase in the burden of disease. Caution is warranted.

We encourage anyone with specific questions about how these data should be interpreted to contact STD/TB Services at (360) 236 - 3460.

## **Glossary**

*Age-Specific Incidence Rate* - An age-specific rate is a rate in which the number of events and population at risk are restricted to an age group [e.g., the numerator (reported cases) and the denominator (mid-year population at risk) refer to a specific age group]. Age-specific rates are useful in comparing age-defined subgroups when rates are strongly age-dependent, as is the case with sexually transmitted diseases.

*Case* - An episode of disease. If a person is diagnosed with more than one STD in a year, each infection is counted as a separate case.

*Confidence Interval* - The confidence interval (CI) evaluates the influence of chance or random variability on the statistical estimate or rate (Selvin, 1996). Surveillance data, even based on complete counts, may be affected by chance. If variation in the occurrence of the disease is essentially random and not affected by differences in diagnosing or reporting, then confidence intervals may be calculated to facilitate comparisons over time, between groups, or between geographic locations (e.g., counties). In this situation, calculated confidence intervals should be based on a Poisson probability distribution. In general, if confidence intervals for two separate rates overlap, there is no statistically significant difference between the two rates.

Narrow confidence intervals for rates indicate greater certainty that the calculated rate is a reliable approximation of the true rate. Conversely, wide confidence intervals signal greater potential variability and less certainty that the calculated rate is a good estimate of the true rate.

*Crude Rate* - The number of events, e.g., reported cases, divided by the total mid-year population. This rate is not “adjusted” or “standardized” for different population discrepancies. In general, no rates should be calculated if the number of events is fewer than five because the rates are considered unstable. Incidence rates allow comparisons between two or more populations by standardizing the denominator and are the most appropriate statistic to use when investigating differences between groups.

*Denominator* - The lower portion of a fraction used to calculate a rate or ratio; usually, this is the mid-year population. The source for denominator data used in this report was: Washington State Adjusted Population Estimates, Office of Financial Management, November, 2004.

*Numerator* - The upper portion of a fraction used to calculate a rate or a ratio, e.g., new cases identified and submitted by providers to local health jurisdictions and forwarded to the State Department of Health, STD/TB Services Section.

*Race and Ethnicity* - The STD confidential case report includes race and ethnicity as two separate categories. Race options include White, Black, Asian, Native Hawaiian/Other Pacific Islander, American Indian/Alaska Native, and Other/Unknown. Ethnicity options include Hispanic, Non-Hispanic, and Unknown. Following the enumeration technique of the United States Census Bureau and the Washington State Center for Health Statistics, race and ethnicity are counted separately. For example, if a case report indicates “White” and “Hispanic”, the case is counted both as White and as Hispanic. However, historical practice in disease surveillance by the Centers for Disease Control and Prevention often treats Hispanic as a racial category. In light of this difference, care must be taken in comparing Washington State data with national or other state data. Disease rates in this report are presented only in tabular form by race and ethnicity using categories employed on the 2000 census, in part due to the uncertainty in bridging Census 2000 and historical race & ethnicity categories and the high proportion of missing race and ethnicity data on STD case reports.

## CHLAMYDIA

*Chlamydia trachomatis* is the most commonly reported bacterial STD in the United States. Estimates indicate approximately 3 million new infections each year (Kaiser Family Foundation, 1998), of which only a fraction, 877,478 were reported to CDC in 2003. Chlamydia infections in women and in many men are often asymptomatic, leaving a large proportion of infected individuals with little or no reason to seek screening and/or treatment. Comprehensive screening and treatment of infected individuals, as well as timely identification and treatment of infected partners, have been shown to significantly reduce the prevalence of chlamydial infections. Re-testing of infected individuals at 10 to 12 weeks post-treatment (*not* as a test-of-cure but as screening for subsequent infection) can also be highly effective in identifying repeat infection and should be adopted as a standard of care for patient management.

Since 1988, Washington State has participated in chlamydia screening and prevalence monitoring activities through the Infertility Prevention Project (IPP). All women attending STD clinics, and women seeking reproductive health services in other facilities who meet selective screening criteria, are the population targeted for chlamydia screening through the IPP. Genital tract chlamydial infections are a major cause of pelvic inflammatory disease (PID), ectopic pregnancy and infertility among women; thus IPP efforts are directed specifically at the female population. Continuing efforts at improving the standard of care for male partners of infected women have resulted in marked increases in reporting of male cases. More sensitive testing methods for detecting chlamydial infection in cervical specimens from women and in less invasive urine samples from men are now widely available, which may also contribute to elevated reporting of cases.

### *State-Level Chlamydia Trends*

**Figure 1** reports the number of chlamydia cases and the calculated incidence rate for Washington State 1994 to 2004. After significant declines through the mid 1990s, reported chlamydia cases have increased steadily since 1996. Though the number and rate of chlamydia infection has increased over the last six years, the 2004 incidence rate for Washington State, 285.9 per 100,000 persons, is favorably comparable to the most recently reported national incidence rate of 304.3 per 100,000 for 2003 (CDC, 2004).

**Figure 2** presents the age-specific incidence rate by gender for chlamydia cases reported in Washington State in 2004. Young women continue to have disproportionately high incidence rates versus young men due to difference in screening by gender. Other observations of interest regarding chlamydia rates and cases in 2004 include:

- Peak female age-specific rates in 20 -24 year olds at 2,265.6 per 100,000
- Peak male age-specific incidence also in 20-24 year olds, 810.8 per 100,000
- 70.7% of all cases reported in 2004 are among 15-24 year-olds
- Age-specific incidence rate decreased slightly in 2004 among females 15-19
- Age-specific incidence rate increased 5.5% in 2004 among males 20-24



The overall rate of chlamydia among women in 2003 is observed to be 414.6 per 100,000 while the male rate continues to be considerably lower than females at 156.2 per 100,000. Males diagnosed with nongonococcal urethritis (NGU) or presenting with other symptomatic conditions are often treated for chlamydia presumptively; no laboratory tests are performed and no case report is completed. Treatment of partners through expedited methods (providing prescription or medications to patients to give to their partners) may also suppress the number of reported cases. Laboratory confirmation of chlamydia infection requires a report to the local health jurisdiction and the Department of Health. For this reason, chlamydia is considered significantly under-reported among males. In light of this, and the well-documented disparity in screening males versus females in reproductive health settings, actual chlamydia incidence and prevalence may be much closer to 1:1 for males and females.

A significant proportion of chlamydia cases were reported without race (17.8%) and ethnicity (25.2%) information in 2004. No statistically meaningful statements relating to relative difference or similarity in rates between race and ethnicity can be made given these missing data; however, Table A (below) presents race and ethnicity data in categories as introduced by the Census Bureau in the 2000 Census. STD case reports were changed to reflect these new race schema in 2001 and rates calculated using this new system are also presented in Table A.

**Table A, Chlamydia Cases and Rates for 2003 and 2004 by Census 2000 Race Categories**

<b><u>Race Category</u></b>	<b><u>Cases in 2003†*</u></b>	<b><u>Rate per 100,000**, 2003</u></b>	<b><u>Cases in 2004††*</u></b>	<b><u>Rate per 100,000**, 2004</u></b>
White	9,313	176.5	9,867	185.0
Black	2,175	1,010.6	2,232	1,011.9
Native American Alaska. Native	565	561.3	557	547.3
Asian	605	164.7	683	180.3
Native Hawaiian Other Pacific Islander	181	660.4	190	681.7
Other Race	384	205.9	392	204.7
Multiple Race	414	230.8	566	307.3
Hispanic Origin***	2,435	474.2	2,592	483.2

†Race data missing for 18.8% ethnicity data missing for 27.6% of cases in 2003

††Race data missing for 17.8%, ethnicity data missing for 25.2% of cases in 2004

\* Due to multiple race option, total may exceed number of reported cases.

\*\* Denominators Washington State Adjusted Population Projections based on OFM population growth estimates, Nov 2004.

\*\*\*Ethnicity not exclusive of race, i.e. cases can be counted as both White and Hispanic

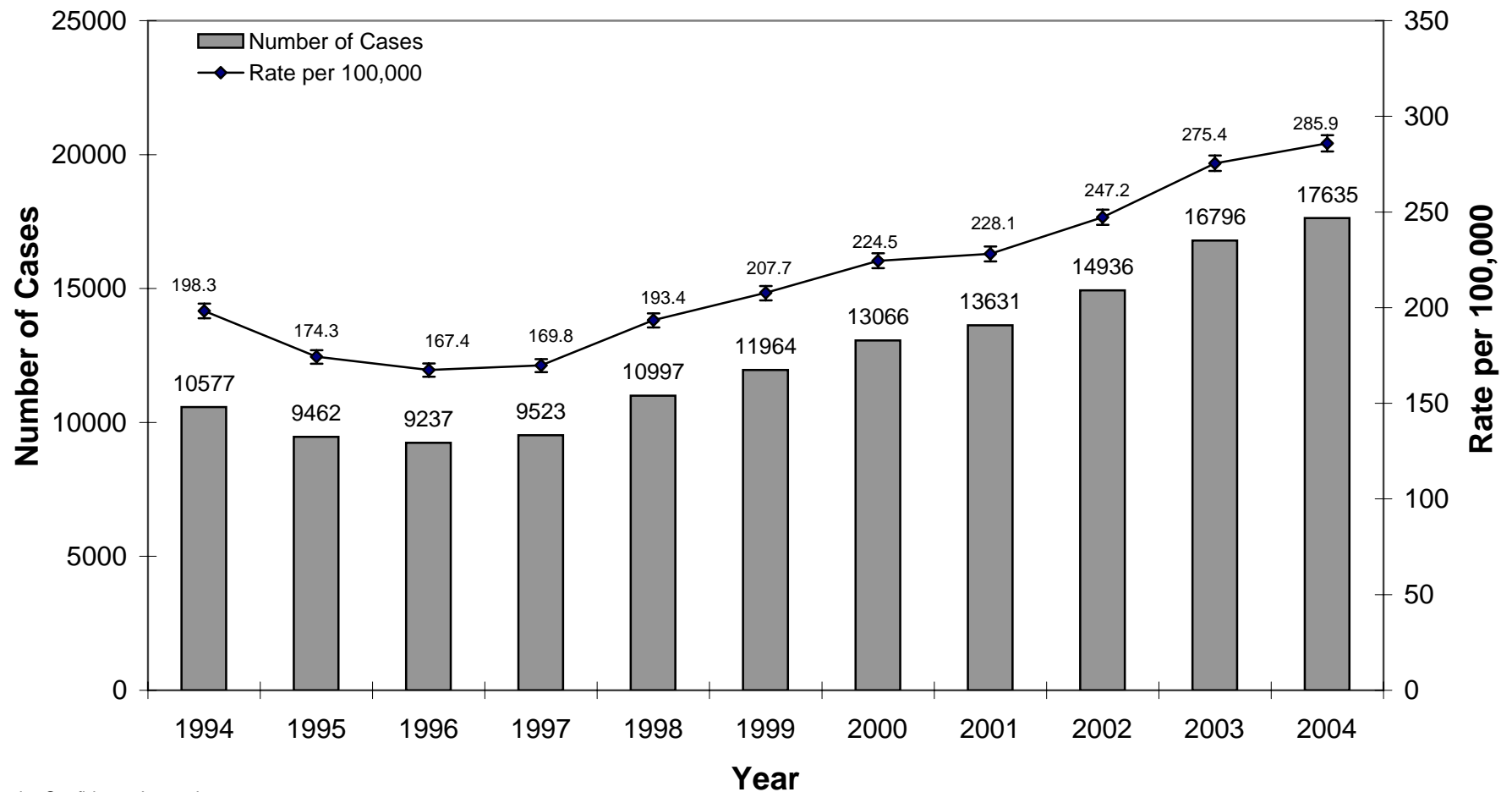
Lack of a true consensus on a biological basis for race and absence of truly objective standards for racial/ethnic classification in disease surveillance argue for a cautious approach to interpreting disease incidence rates by race or ethnicity. Race and ethnicity may also be correlated with other potentially significant ecological determinants of health status, such as socio-economic status, geographic variation in access to health care services, and sexual mixing patterns; analysis by race and ethnicity may be confounded by these unknown factors.

### *County-Level Chlamydia Trends*

To assess the burden of disease and compare this burden across counties of differing population sizes, county-specific incidence rates were calculated (**Figure 3**). Thirty-seven of Washington's 39 counties reported at least five cases of chlamydia in 2004. **Figure 4** shows these county-specific incidence rates ranked from highest to lowest.

Chlamydia incidence rates for males and females by county are presented in **Table 1** (pg. 25). The largest number of chlamydia cases (5,336) was reported by King County. King County also reported the largest number of male cases (1,766); however, the highest male incidence rate, 263.8 per 100,000, was reported for Ferry County and the second highest rate for males, 216.7 per 100,000 is reported from Lewis County. King County reported the largest number of female chlamydia cases (3,570), and the female incidence rate, 397.5 per 100,000 for females in King County, was ranked thirteenth among counties in Washington State. The highest county-specific incidence rate for chlamydia among women was Yakima County with a rate of 689.0 per 100,000. Due to under-diagnosing, under-reporting, and the asymptomatic nature of the disease, chlamydia incidence rates are considered conservative. These assumptions make county-to-county comparisons generally unreliable, especially among counties with relatively small populations.

**Figure 1. Reported Chlamydia Cases & Incidence Rates\*, (95%CI\*\*), Washington State, 1994-2004**



— = Confidence Interval

\* This is the crude rate, not adjusted for age.

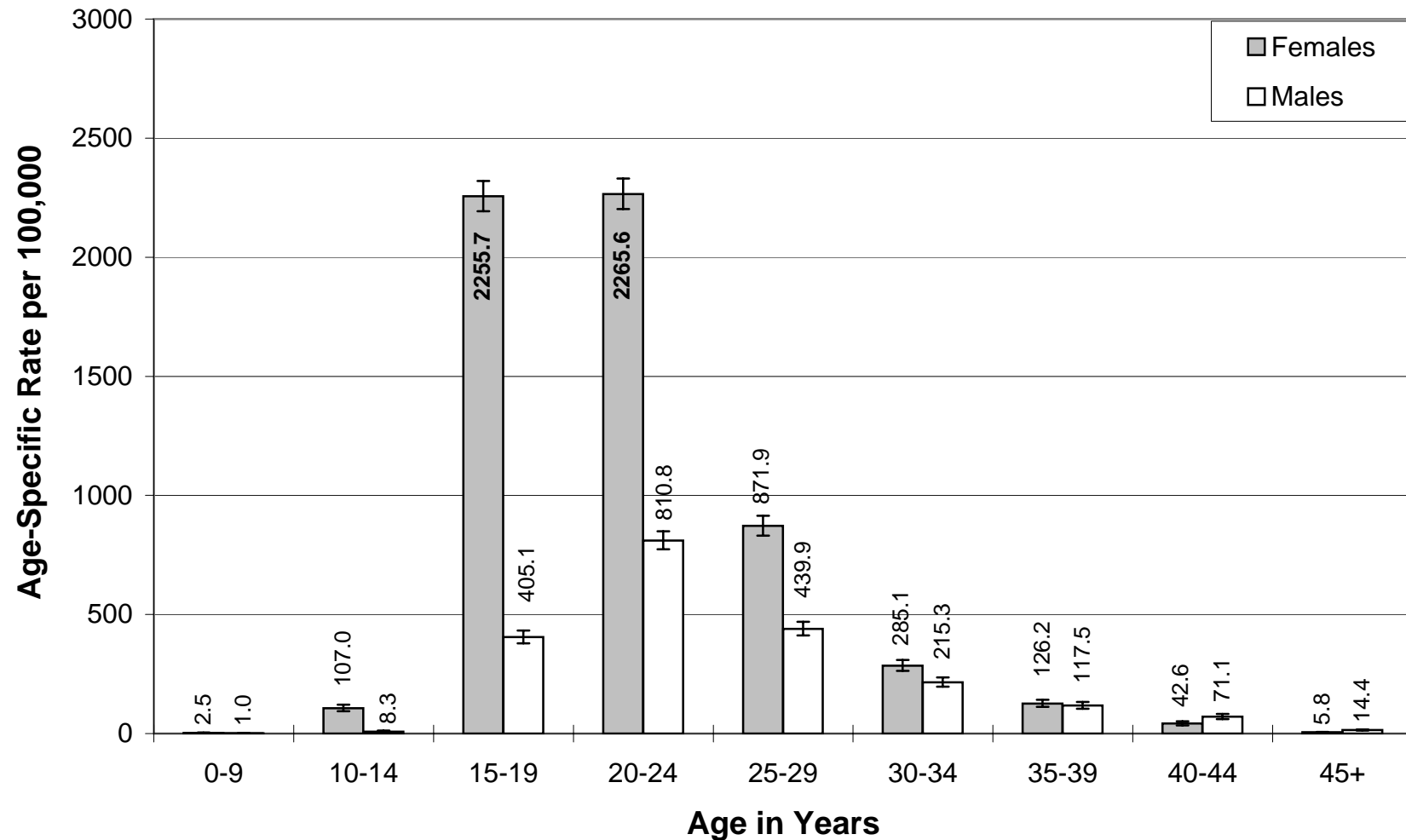
\*\*95% Confidence Intervals (CI) evaluate the influence of chance on the rate

Numerator: Reported cases of chlamydia.

Denominator: Washington State Adjusted Population Estimates, OFM, Nov. 2004.

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# Figure 2. Age-Specific Chlamydia Incidence Rates\* by Gender, Washington State, 2004



— = Confidence Interval

95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

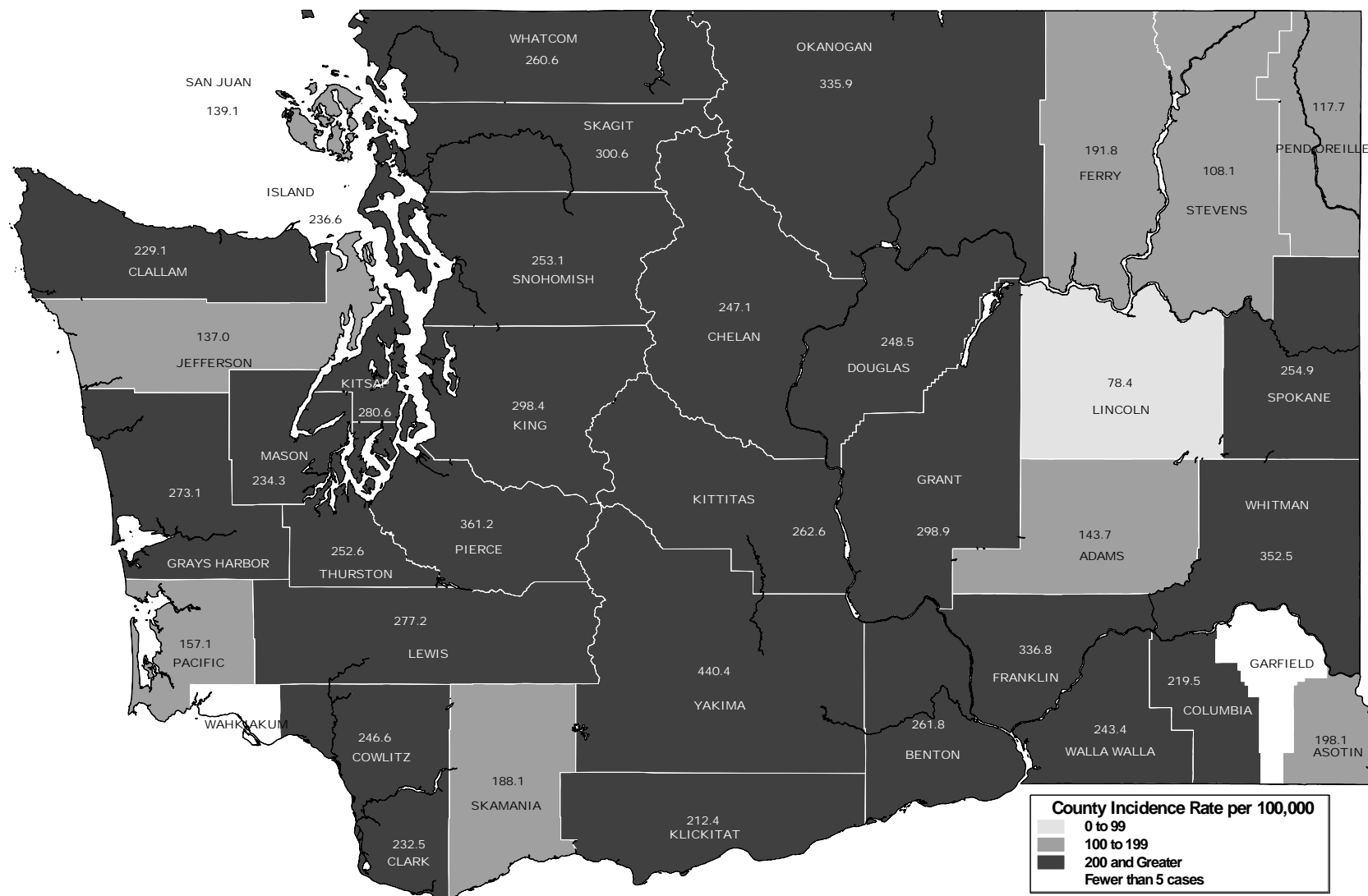
\* Date of Birth missing for 174 (0.9%) cases and excluded from calculated age-specific rate.

Numerator: Reported cases of chlamydia.

Denominator: Washington State Adjusted Population Estimates, OFM, Nov. 2004.

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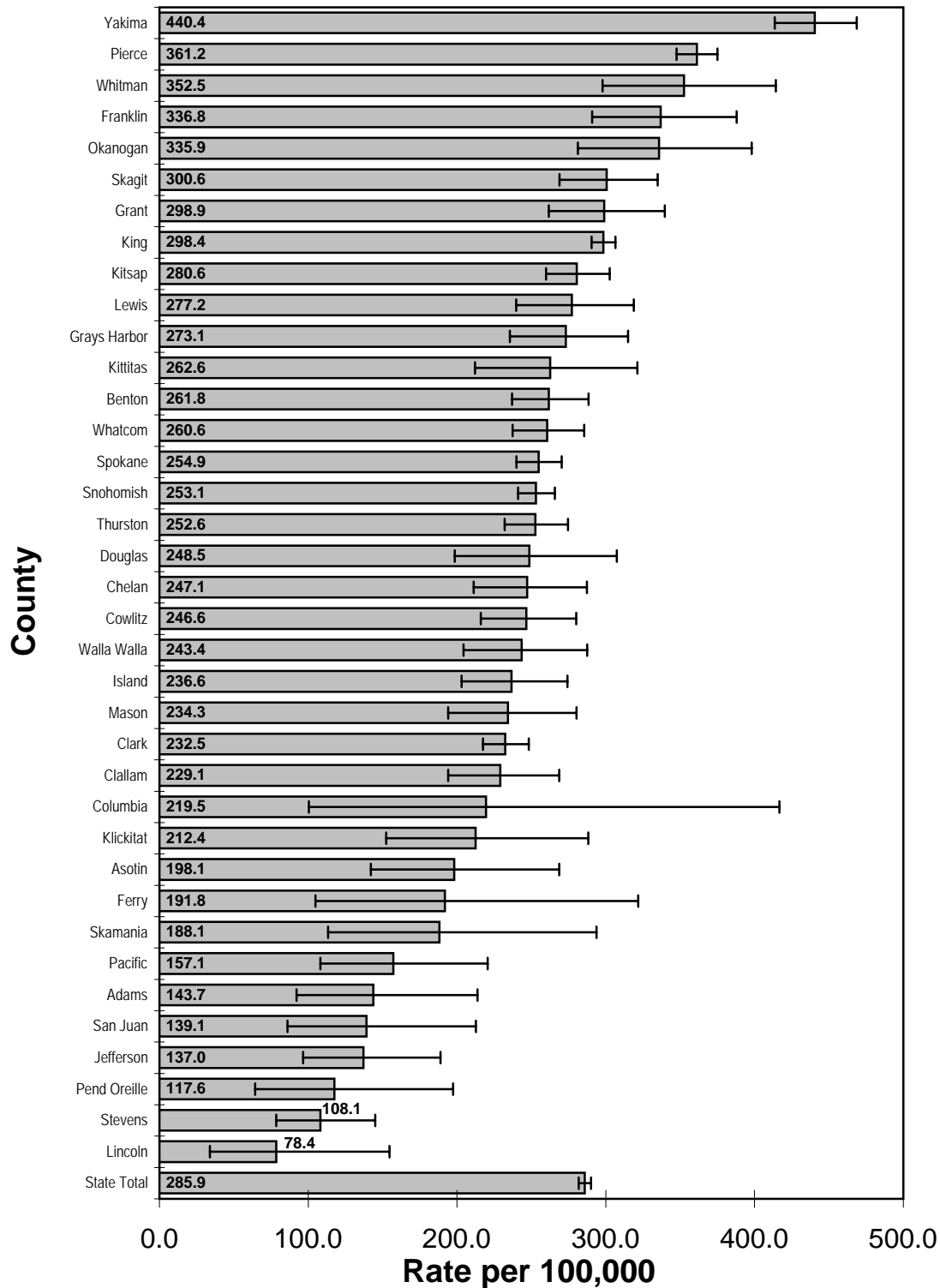
**Figure 3. Chlamydia Incidence Rates by County  
Washington State, 2004**



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Denominators: WA Population Estimates  
OFM, Nov 2004

**Figure 4. Chlamydia Incidence Rates\* by County, (95% CI)\*\* Washington State, 2004  
Ranked from Highest to Lowest**



\* This is the crude rate, not adjusted for age. Counties with fewer than 5 cases not shown. |—| = Confidence Interval

\*\* 95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

## GONORRHEA

Infections due to *Neisseria gonorrhoeae* (GC) continue to be a major cause of morbidity in the United States. Negative consequences of gonorrhea infection may include pelvic inflammatory disease (PID), infertility, ectopic pregnancy, and chronic pelvic pain. Epidemiologic studies provide strong evidence that gonococcal infections may also facilitate HIV transmission, an important consideration given the increased rates of gonorrhea among men-who-have-sex-with-men (MSM) observed in recent years.

### *State-Level Gonorrhea Trends*

The national gonorrhea rate declined 74.3% from 1975 through 1998 (CDC 2004). Since that time gonorrhea incidence has declined less strikingly to a national incidence rate of 116.2 per 100,000. In Washington State, gonorrhea incidence also declined through 1998 but increased 46% to a high of 50.1 per 100,000 in 2001. The reported gonorrhea incidence rate for 2004 is 45.6 per 100,000, statistically unchanged from the rate observed in 2003 (**Figure 5**).

Treatment of partners through expedited methods (providing prescription or medications to patients to give to their partners) may suppress the number of reported cases and artificially depress rates.

- Gonorrhea incidence is observed to be highest in the 20 – 24 age group for males, 166.6 per 100,000
- Highest incidence among females is in the 15 – 19 age group at 197.7 per 100,000
- Gonorrhea infection continues to disproportionately affect MSM populations in Western Washington
- Statewide male-to-female case ratio in 2004 is 1.28 to 1, a slight decrease from 2003.

In King County in 2004, the male to female case ratio decreased to 2.12 male cases for each female case, a ratio still considerably higher than the statewide case ratio indicating continuing high rates of gonorrhea infection among MSM. Gonococcal infections in MSM reported by the Public Health – Seattle & King County (PHSKC) STD Clinic more than doubled from 1997 to 1998. Routine matching of STD and HIV surveillance data indicate that at a minimum 5.5% of incident gonorrhea cases statewide were also HIV+ in 2003. This rate of co-infection is a troubling finding given the likelihood that gonorrhea infection significantly augments transmissibility of HIV.

It has been estimated that the rate of gonococcal infection in MSM in King County increased from 155 per 100,000 in 1994 to 727 per 100,000 in 2002, in contrast to the rate among presumed heterosexuals in King County of 82 per 100,000 (M Golden, 2003, personal communication). The incidence of gonorrhea among all HIV positive persons in Washington State was estimated to be 17.5 per 1,000 in 2003 based on matching records, an incidence rate almost four times the overall statewide incidence rate for gonorrhea.

The age distribution of gonorrhea differs between genders and age groups as seen in **Figure 6**. For Washington State females 15 –19 experience higher incidence rates while male rates

tend to be higher in those over 20 years of age, in part reflecting the contribution of MSM to overall male rates of infection.

Statewide, the greatest incidence of disease among females, 63.1% of total female morbidity in 2004, is among 15-24 year olds, while for males the burden of disease is distributed more evenly among those 25 and older. Males had a higher gonorrhea incidence rate (51.5 per 100,000) than females in 2004 (39.7 per 100,000). A major factor contributing to the different distribution of gonorrhea incidence in different age groups among men and women is the documented outbreak among MSM whose median reported age was 30 (*ibid*). Gonococcal infection appears to be endemic in core MSM populations and recent evidence suggests that a greater proportion of infections in the overall population may be asymptomatic than previously assumed (Turner, Rogers, Miller, et al. 2002).

In Washington State, racial disparities in disease burden clearly continue to exist. In 2004, 18.8% of reported cases of gonorrhea were missing race data and 28.9% of case reports were missing ethnicity data. Given the high proportion of cases missing these data, no meaningful statements relating to relative difference or similarity in rates between these groups can be made, with the exception that rates observed for Blacks continue to exceed those of other racial groups by a significant percentage despite the decline in Blacks noted previously. Table B shows reported cases and incidence rates calculated for the Census 2000 race categorization.

**Table B, Gonorrhea Cases and Rates, 2003 and 2004 by Census 2000 Race Categories**

<b><u>Race Category</u></b>	<b><u>Cases in 2003†*</u></b>	<b><u>Rate per 100,000**, 2003</u></b>	<b><u>Cases in 2004††*</u></b>	<b><u>Rate per 100,000**, 2004</u></b>
White	1,259	23.9	1348	25.3
Black	684	317.8	637	288.8
Native American/Ak. Native	76	75.5	96	94.3
Asian	54	14.7	64	16.9
Native Hawaiian/Other P.I.	22	80.3	15	53.8
Other Race	41	22.0	40	20.9
Multiple Race	57	31.8	83	45.1
Hispanic Origin***	251	48.9	287	53.5

†Race data missing for 20.3%, ethnicity data missing for 29.2% of cases in 2003

††Race data missing for 18.8%, ethnicity data missing for 28.9% of cases in 2004

\* Due to multiple race option, total will exceed number of reported cases.

\*\* Denominators Washington State Adjusted Population Projections based on OFM population estimates, Nov 2004.

\*\*\*Ethnicity not exclusive of race, i.e. cases can be counted as both White and Hispanic.

Lack of a true biological basis for race and no objective standards for racial/ethnic classification in disease surveillance argue for a cautious approach to interpreting disease incidence rates by race or ethnicity. Race and ethnicity may be correlated with other potentially significant ecological determinants of health status, such as socio-economic status, geographic variation in access to health care services, and sexual mixing patterns; analysis by race and ethnicity is confounded by these unknown factors.

#### *County-Level Gonorrhea Trends*

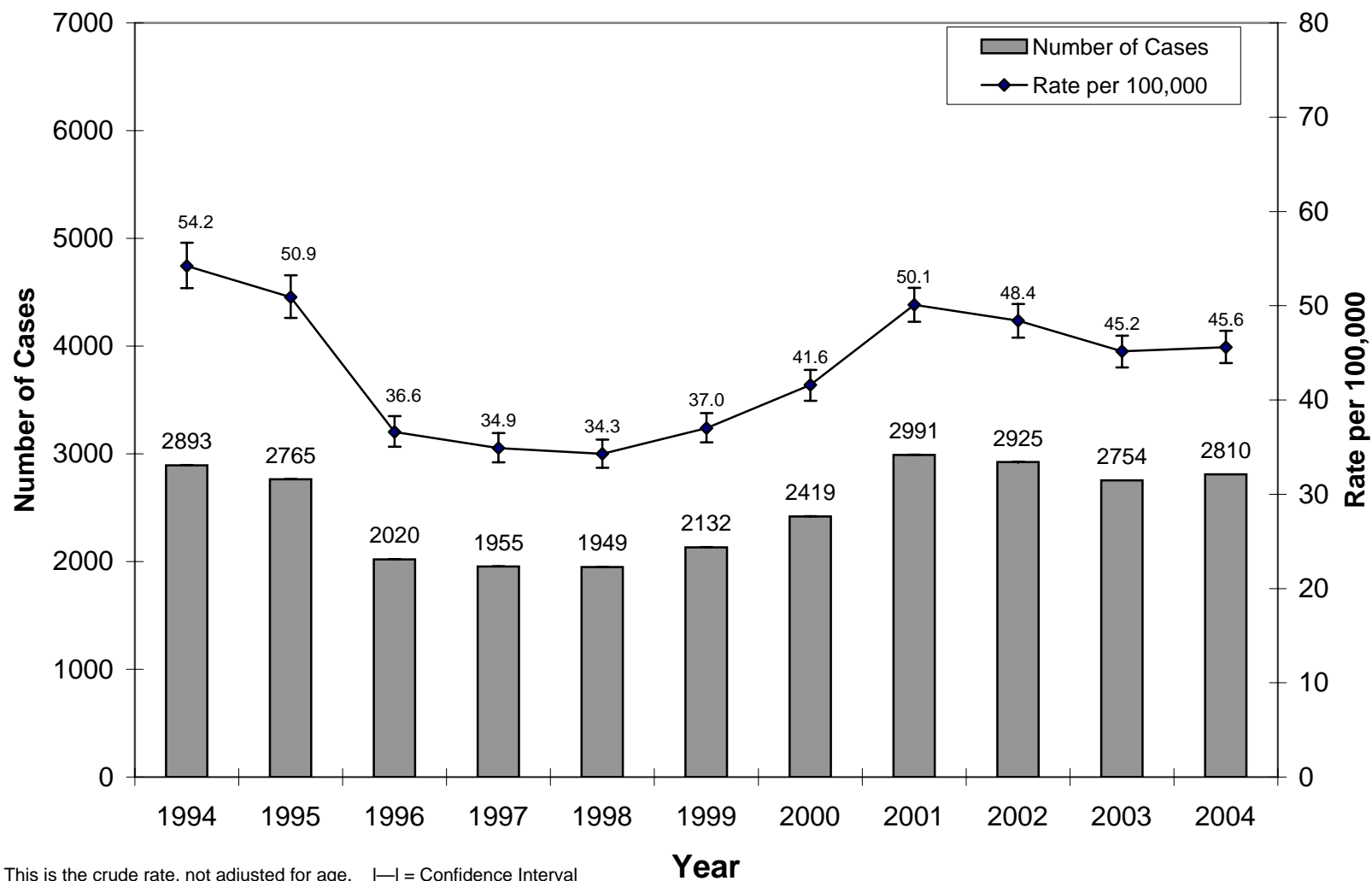


The distribution of gonorrhea not only differs by gender, age, and race, as noted above, it also differs by geography. At the county-level, gonorrhea incidence disproportionately affects densely populated urban versus sparsely populated rural counties (**Figures 7 & 8**):

- Highest gonorrhea incidence rate is observed for Yakima County at 87.0 per 100,000
- King County has the second highest observed rate at 70.7 per 100,000
- Pierce, Cowlitz and Clark Counties also have incidence rates higher than the overall Washington State rate of 45.6 per 100,000

To further illustrate the differences in gonorrhea disease burden across counties, gender-specific and age-specific rates were calculated. Gonorrhea incidence rates for males and females by county are presented in **Table 3** (pg. 27). For many counties in Washington State, there were either no gonorrhea cases or too few cases to calculate a stable incidence rate by gender. Among the counties with sufficient cases to allow calculation of gender-specific incidence rates, Yakima County had the highest rate for females at 92.2 per 100,000 and King County continues to have the highest rate for males at 96.6 per 100,000, although this represents a decrease in male incidence in King County from 108.1 per 100,000 in 2003.

**Figure 5. Reported Gonorrhea Cases & Incidence Rates\* (95% CI\*\*), Washington State, 1994-2004**

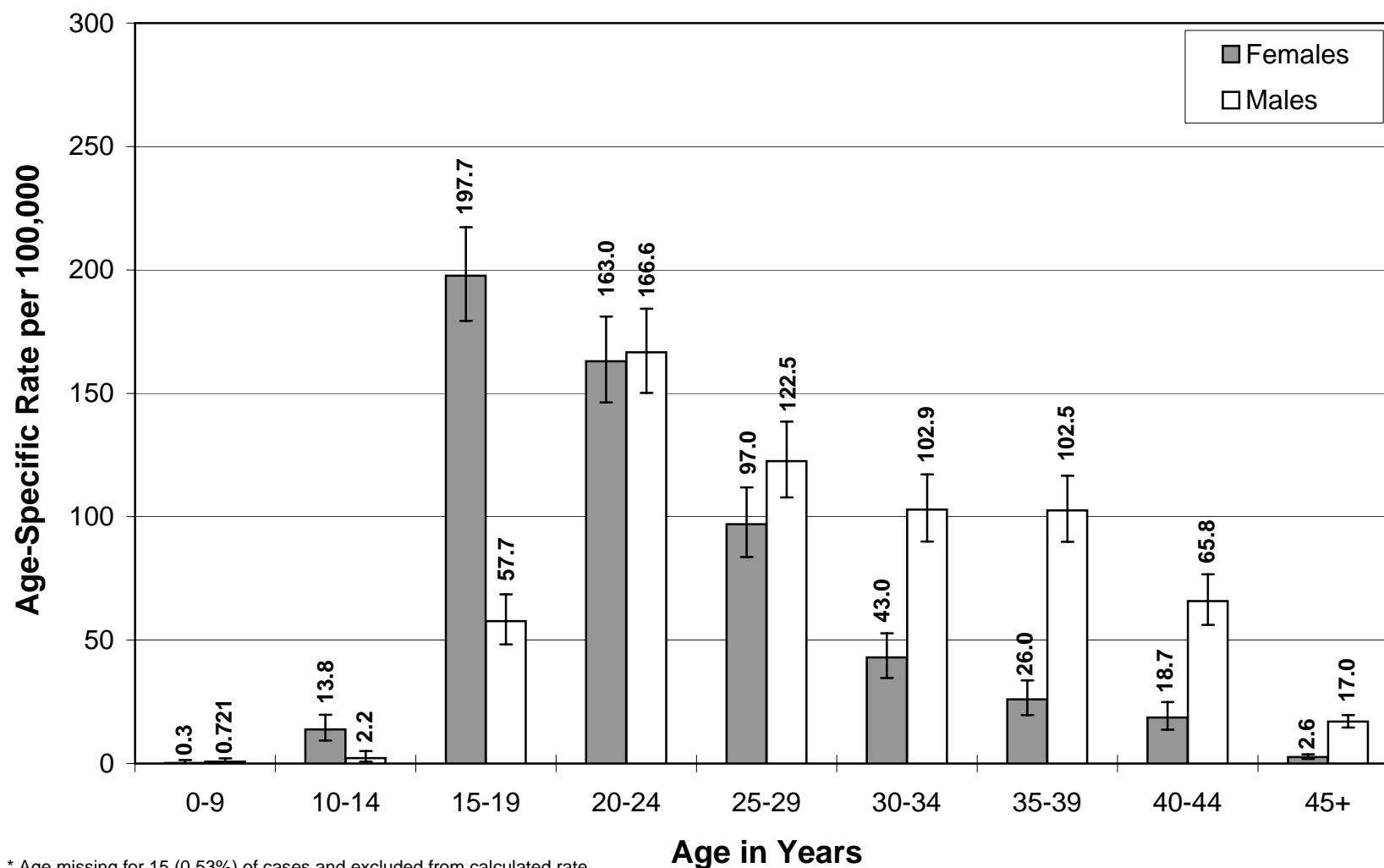


\* This is the crude rate, not adjusted for age. |—| = Confidence Interval  
 \*\* 95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

Numerator: Reported cases of gonorrhea.  
 Denominator: Washington State Adjusted Population Estimates, OFM, Nov. 2004.

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**Figure 6. Age-Specific Gonorrhea Rates\*  
(95% CI)\*\* by Gender, Washington State, 2004**



\* Age missing for 15 (0.53%) of cases and excluded from calculated rate.

\*\* 95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

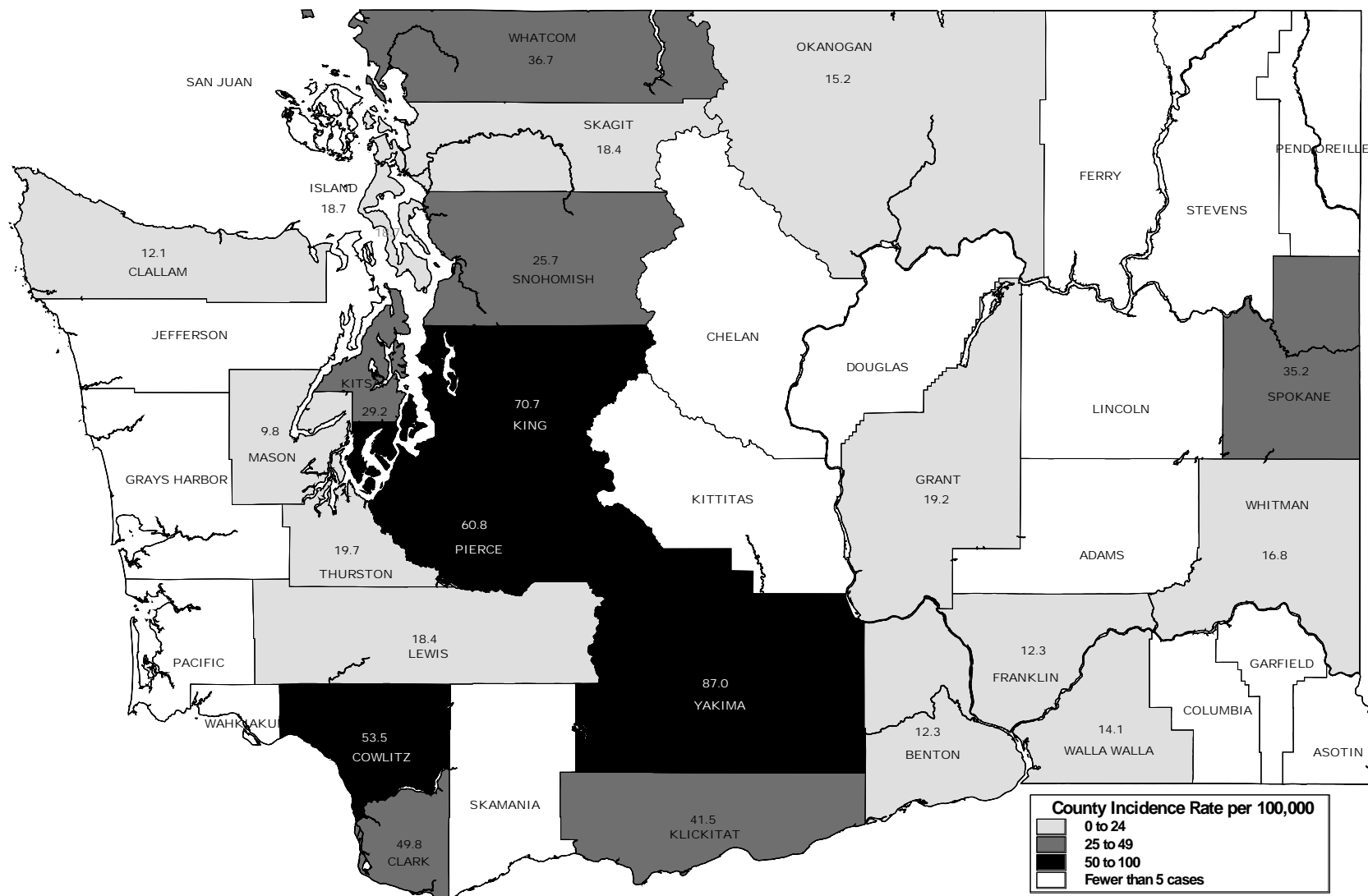
— = Confidence Interval

Numerator: Reported cases of gonorrhea.

Denominator: Washington State Adjusted Population Estimates, OFM, Nov. 2004.

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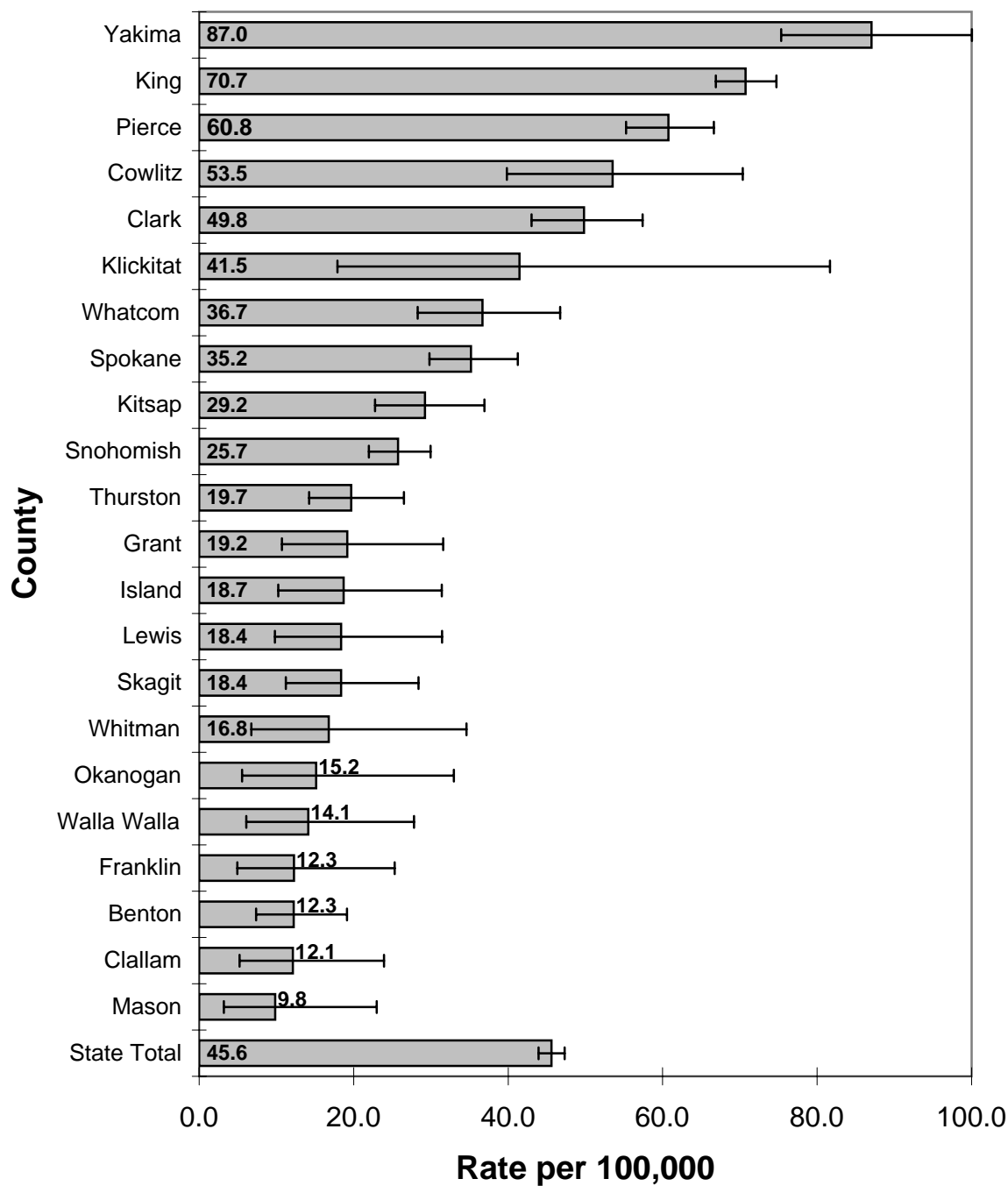
**Figure 7. Gonorrhea Incidence Rates by County  
Washington State, 2004**



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Denominators: WA Population Estimates  
OFM, Nov 2004

**Figure 8. Gonorrhea Incidence Rates\*  
(95% CI)\*\* by County, Washington State,  
2004, Ranked from Highest to Lowest**



\* This is the crude rate, not adjusted for age. Counties with fewer than 5 cases not shown.

—|— = Confidence Interval

\*\* 95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

Numerator: Reported cases of gonorrhea.

Denominator: Washington State Adjusted Population Estimates, OFM, Nov. 2004.

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## SYPHILIS

Syphilis is caused by infection with the spirochete (a slender, spiral-shaped, highly mobile bacteria) *Treponema pallidum*, and has four distinct stages - primary, secondary, latent and late latent. A painless genital ulcer that will resolve spontaneously without treatment characterizes primary syphilis infection. Secondary infection most commonly presents as a rash of varying duration, which may be recurrent. An infected person who does not get treatment may infect others during the first two stages (primary, secondary). Early latent syphilis is defined as an infection that is less than one year in duration and primary, secondary and early latent infection are also perinatally infectious. A relapse in secondary symptoms is also considered an early latent infection. Trans-placental transmission of syphilis is a potential cause of fetal loss and congenital abnormalities. In the late latent stage, untreated syphilis, although not contagious, can cause serious heart abnormalities, mental disorders, blindness, other neurological problems and death. All four stages of syphilis were reported in Washington State in 2004 (**Figure 9**).

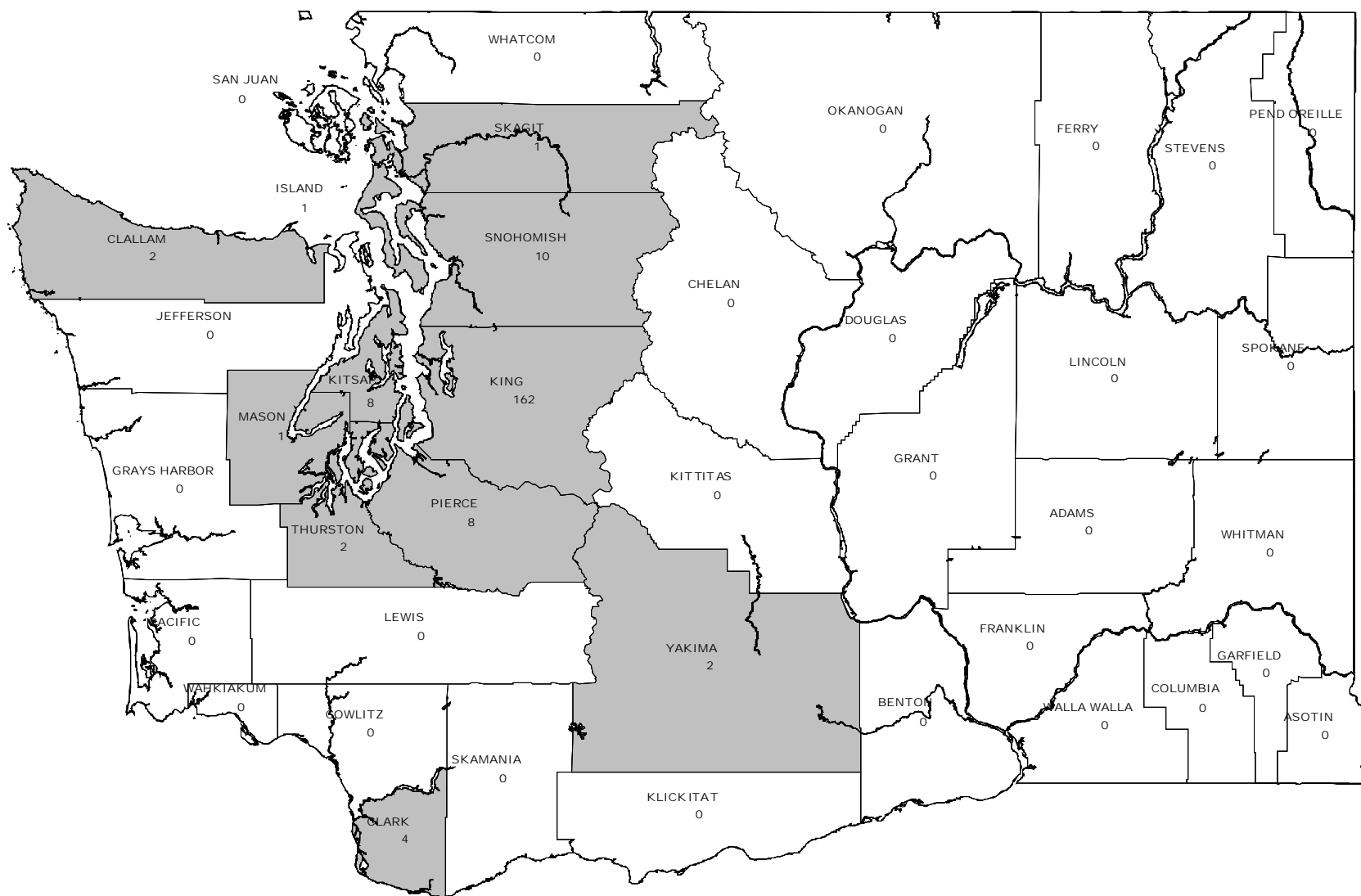
### *State-Level Syphilis Trends*

- Incidence rate for P & S syphilis increased significantly to 2.4 per 100,000 in 2004 compared to the rate of 1.3 per 100,000 observed in 2003
- An outbreak of syphilis among MSM in King County continues to accelerate; evidence suggests that at least 65% of these men are also HIV+

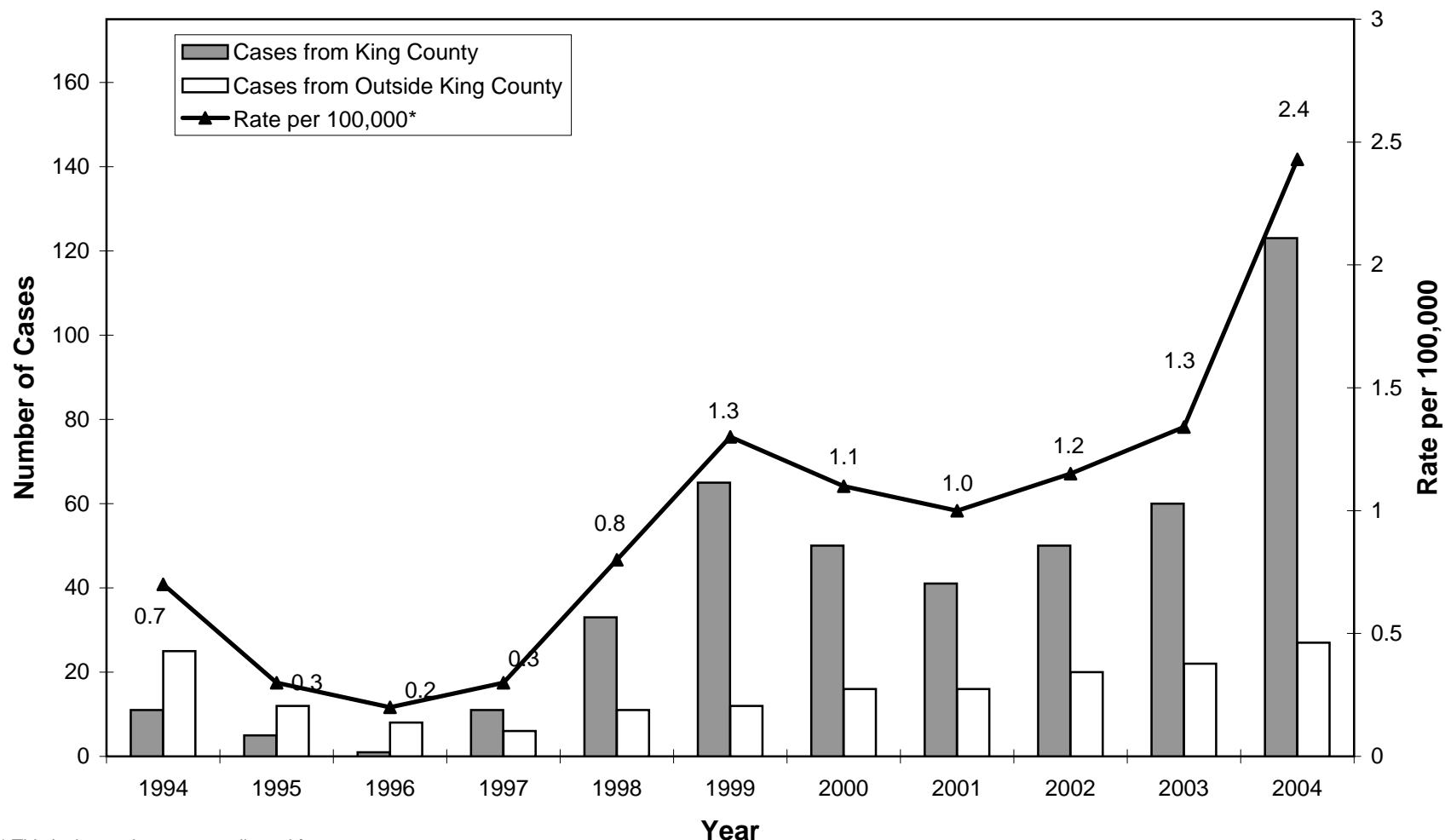
Of 150 primary and secondary syphilis cases reported in 2004, 123 (82%) were reported from King County (**Figure 11**). This pattern has been observed since 1997 in contrast to previous outbreaks where a greater proportion of cases were reported from counties other than King County. There continues to be a large disparity between male and female rates (**Figure 12**), which strongly suggests that the ongoing syphilis outbreak in Seattle-King County is driven primarily by MSM. However six female cases of early syphilis were reported in 2004 and there is evidence to suggest that syphilis may become resurgent in heterosexuals. No cases of congenital syphilis were reported in 2004 in Washington State.

In 1996, King County reported only a single case of P & S syphilis. In 2004, 123 cases of P & S syphilis were reported from King County. It has been proposed that the transmission behaviors responsible for this outbreak have occurred primarily in anonymous and multi-partner public sex environments, has a significant association with methamphetamine and other illicit drug use and at least two-thirds of these cases are also HIV positive. These findings strongly reinforce the importance of routine screening for STDs in HIV-specific primary care settings. Cases of primary, secondary and early latent syphilis reported statewide in 2004 increased 70% from cases reported in 2003. Of note in **Figure 9** is the 1.8 to 1 proportion of secondary stage disease versus primary syphilis reported in 2004. The fact that there is a larger proportion in the secondary stage of disease suggests that there continues to be an unrecognized burden of disease in the community and that continued surveillance, education and sustainable interventions are necessary for the control of infectious syphilis.

**Figure 10. Number of Early Syphilis Cases (Primary, Secondary & Early Latent), Washington State, 2004**



# Figure 11. Reported Primary & Secondary Syphilis Cases, King County and Washington State, Statewide Incidence Rate\* 1994-2004



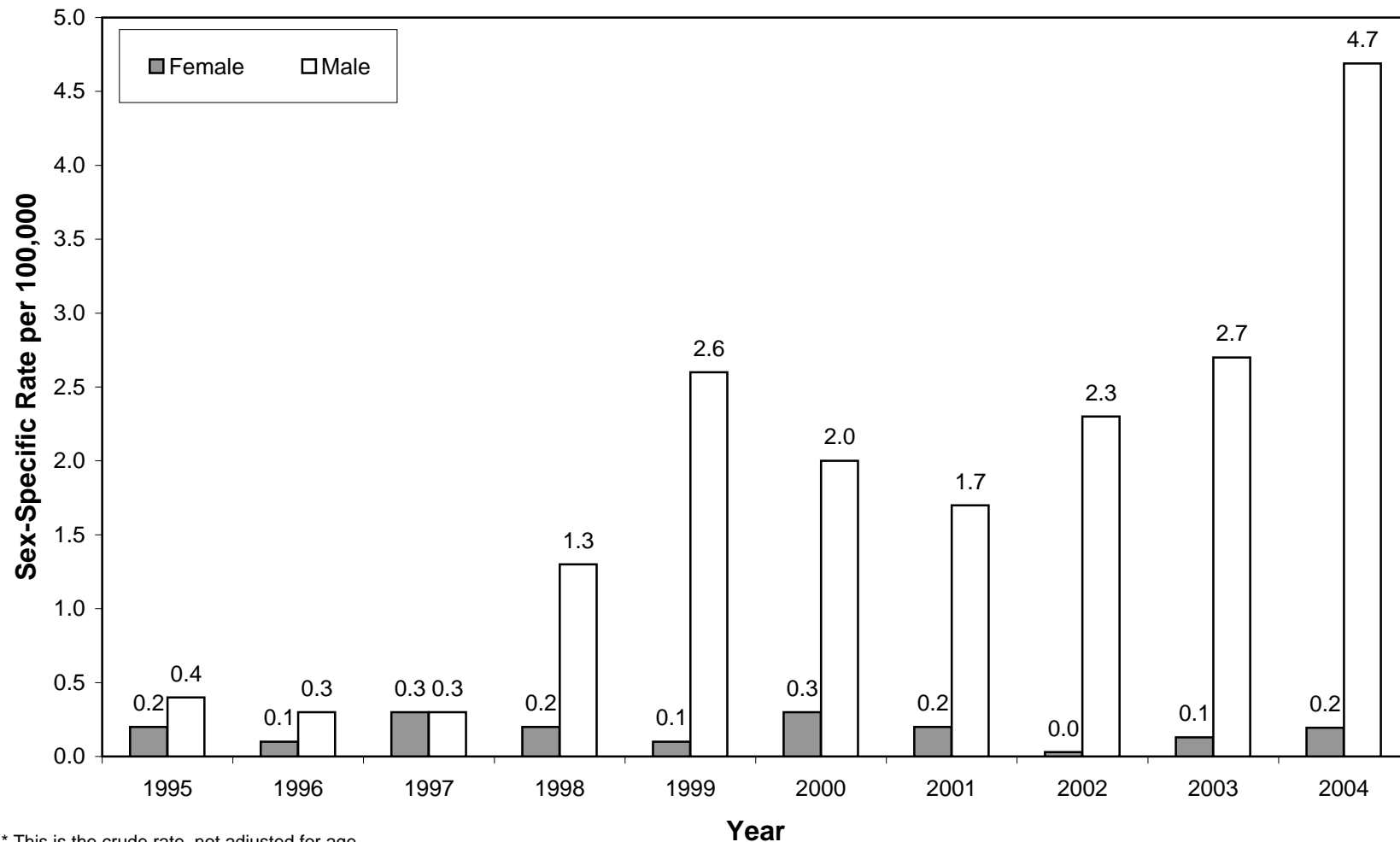
\* This is the crude rate, not adjusted for age.

Numerator: Reported cases of primary and secondary syphilis.  
Denominator: Washington State Adjusted Population Estimates, OFM. Nov. 2004.

Washington State Department of Health  
STD/TB Services  
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**Figure 12. Primary & Secondary Syphilis Incidence Rates\*, Males vs. Females, Washington State, 1995-2004**



\* This is the crude rate, not adjusted for age.

Numerator: Reported cases of primary and secondary syphilis.  
Denominator: Washington State Adjusted Population Estimates, OFM, Nov. 2004.

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## **OTHER STDs**

In addition to chlamydia, gonorrhea, and syphilis there are four additional STDs that are currently reportable to the state Department of Health. Initial genital herpes infection, neonatal herpes infection, chancroid, lymphogranuloma venereum (LGV), and granuloma inguinale (GI) currently require reporting by health care providers.

### *Genital Herpes, Initial Infection*

Washington State is one of a handful of states that require reporting of initial infection of genital herpes and this reporting requirement was made permanent by the State Board of Health in 2005. Only the initial infection is tracked in the state surveillance system. In 2004, 2,152 cases of genital herpes initial infection were reported (34.9 per 100,000 persons). One case of neonatal herpes infection was reported in Washington State in 2004. Unlike chlamydia and gonorrhea, a suspected herpes infection does not require laboratory confirmation in order for the case to be reported to the Washington State Department of Health. Given recent CDC estimates of genital herpes prevalence in the United States, cases of initial genital herpes reported in Washington State are considered an underestimation of true incidence.

### *Others*

Chancroid, LGV, and GI are very rare STDs. A total of only 54 cases of chancroid were reported nationwide in 2003. No cases of chancroid or GI were reported in Washington State in 2004. While no cases of LGV were identified in Washington State in 2004, heightened vigilance for LGV infection is being practiced in response to an international outbreak of LGV among MSM in Northern Europe.

**STATE OF WASHINGTON**  
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**REPORTED CHLAMYDIA CASES AND INCIDENCE RATES**  
**BY SEX AND COUNTY**

**Table 1**

COUNTY	2004 POPLUATION		CHLAMYDIA			
	MALE	FEMALE	MALE	RATE/100,000	FEMALE	RATE/100,000
Adams	8,535	8,165	4	*	20	244.9
Asotin	9,867	10,833	6	60.8	35	323.1
Benton	77,157	77,943	90	116.6	316	405.4
Chelan	34,081	34,319	43	126.2	126	367.1
Clallam	32,591	33,309	33	101.3	118	354.3
Clark	190,362	192,938	259	136.1	632	327.6
Columbia	2,001	2,099	4	*	5	238.2
Cowlitz	47,259	48,041	41	86.8	194	403.8
Douglas	16,965	17,235	18	106.1	67	388.7
Ferry	3,790	3,510	10	263.9	4	*
Franklin	29,775	27,225	44	147.8	148	543.6
Garfield	1,190	1,210	0	0.0	0	0.0
Grant	40,059	38,241	52	129.8	182	475.9
Grays Harbor	34,420	34,780	44	127.8	145	416.9
Island	37,466	37,334	40	106.8	137	367.0
Jefferson	13,407	13,593	8	59.7	29	213.3
King	890,183	898,117	1,767	198.5	3,568	397.3
Kitsap	121,420	118,080	147	121.1	525	444.6
Kittitas	17,794	18,006	29	163.0	65	361.0
Klickitat	9,643	9,657	7	72.6	34	352.1
Lewis	35,075	35,625	76	216.7	120	336.8
Lincoln	5,061	5,139	1	*	7	136.2
Mason	26,260	24,540	36	137.1	83	338.2
Okanogan	19,764	19,836	27	136.6	106	534.4
Pacific	10,416	10,584	12	115.2	21	198.4
Pend Oreille	5,988	5,912	1	*	13	219.9
Pierce	370,221	373,779	677	182.9	2,010	537.8
San Juan	7,377	7,723	7	94.9	14	181.3
Skagit	53,908	54,892	69	128.0	258	470.0
Skamania	5,089	5,011	7	137.6	12	239.5
Snohomish	322,770	322,030	437	135.4	1,197	371.7
Spokane	212,066	219,934	258	121.7	843	383.3
Stevens	20,292	20,408	11	54.2	33	161.7
Thurston	107,094	111,406	145	135.4	407	365.3
Wahkiakum	1,902	1,898	1	*	2	*
Walla Walla	28,869	27,381	37	128.2	101	362.9
Whatcom	87,427	89,873	92	105.2	370	411.7
Whitman	21,120	20,580	44	208.3	103	500.5
Yakima	113,567	113,933	217	191.1	785	689.0
<b>STATE TOTAL</b>	<b>3,072,231</b>	<b>3,095,569</b>	<b>4,801</b>	<b>156.3</b>	<b>12,835</b>	<b>414.6</b>

\*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON  
STD MORBIDITY REPORT - 2004  
REPORTED GONORRHEA CASES AND INCIDENCE RATES  
BY AGE (15-24 YEARS) AND COUNTY**

**Table 4**

COUNTY	2004 POPULATION		GONORRHEA			
	15-19	20-24	15-19	RATE/100,000	20-24	RATE/100,000
Adams	1,504	1,176	0	0.0	2	*
Asotin	1,507	1,190	0	0.0	1	*
Benton	12,582	9,518	1	*	5	52.5
Chelan	5,256	4,000	0	0.0	0	0.0
Clallam	4,468	3,107	2	*	0	0.0
Clark	27,372	24,077	32	116.9	46	191.1
Columbia	290	200	0	0.0	0	0.0
Cowlitz	6,889	5,736	14	*	17	*
Douglas	2,691	1,935	1	*	0	0.0
Ferry	682	343	0	0.0	0	0.0
Franklin	5,177	4,598	2	*	2	*
Garfield	202	79	0	0.0	0	0.0
Grant	6,770	5,530	3	*	6	108.5
Grays Harbor	5,205	3,822	0	0.0	2	*
Island	4,871	4,938	1	*	8	162.0
Jefferson	1,547	921	2	*	0	0.0
King	110,321	129,520	208	188.5	256	197.7
Kitsap	17,502	16,724	15	85.7	28	167.4
Kittitas	3,414	5,984	0	0.0	3	*
Klickitat	1,430	840	0	0.0	6	714.3
Lewis	5,617	4,050	4	*	1	*
Lincoln	710	336	0	0.0	0	0.0
Mason	3,551	2,755	1	*	0	0.0
Okanogan	3,083	1,962	1	*	2	*
Pacific	1,383	814	1	*	0	0.0
Pend Oreille	871	413	0	0.0	0	0.0
Pierce	55,517	54,636	122	219.8	138	252.6
San Juan	752	466	0	0.0	0	0.0
Skagit	8,248	6,609	4	*	7	105.9
Skamania	766	440	0	0.0	0	0.0
Snohomish	45,645	41,098	34	74.5	42	102.2
Spokane	33,549	33,730	14	41.7	48	142.3
Stevens	3,355	1,688	0	0.0	1	*
Thurston	16,515	15,081	5	30.3	20	132.6
Wahkiakum	256	140	0	0.0	1	*
Walla Walla	4,934	5,426	5	101.3	1	*
Whatcom	14,582	19,116	17	116.6	14	73.2
Whitman	5,039	10,403	0	0.0	2	0.0
Yakima	18,835	16,422	60	318.6	67	408.0
<b>STATE TOTAL</b>	<b>442,888</b>	<b>439,823</b>	<b>549</b>	<b>124.0</b>	<b>726</b>	<b>165.1</b>

\*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON**  
**STD MORBIDITY REPORT - 2004**  
**REPORTED GONORRHEA CASES AND INCIDENCE RATES**  
**BY SEX AND COUNTY**

**Table 3**

COUNTY	2004 POPULATION		GONORRHEA			
	MALE	FEMALE	MALE	RATE/100,000	FEMALE	RATE/100,000
Adams	8,535	8,165	2	*	1	*
Asotin	9,867	10,833	2	*	0	*
Benton	77,157	77,943	14	18.1	5	6.4
Chelan	34,081	34,319	2	*	0	0.0
Clallam	32,591	33,309	4	*	4	*
Clark	190,362	192,938	69	36.2	122	63.2
Columbia	2,001	2,099	0	0.0	0	0.0
Cowlitz	47,259	48,041	25	52.9	26	54.1
Douglas	16,965	17,235	1	*	1	*
Ferry	3,790	3,510	0	0.0	0	0.0
Franklin	29,775	27,225	7	23.5	0	0.0
Garfield	1,190	1,210	0	0.0	0	0.0
Grant	40,059	38,241	6	15.0	9	23.5
Grays Harbor	34,420	34,780	2	*	2	*
Island	37,466	37,334	7	18.7	7	18.7
Jefferson	13,407	13,593	2	*	1	*
King	890,183	898,117	861	96.7	405	45.1
Kitsap	121,420	118,080	29	23.9	41	34.7
Kittitas	17,794	18,006	1	*	2	*
Klickitat	9,643	9,657	3	*	5	*
Lewis	35,075	35,625	4	*	9	25.3
Lincoln	5,061	5,139	1	*	0	0.0
Mason	26,260	24,540	2	*	3	*
Okanogan	19,764	19,836	1	*	5	25.2
Pacific	10,416	10,584	0	0.0	1	*
Pend Oreille	5,988	5,912	0	0.0	1	*
Pierce	370,221	373,779	213	57.5	239	63.9
San Juan	7,377	7,723	0	0.0	0	0.0
Skagit	53,908	54,892	7	13.0	13	23.7
Skamania	5,089	5,011	0	0.0	2	*
Snohomish	322,770	322,030	93	28.8	73	22.7
Spokane	212,066	219,934	78	36.8	74	33.6
Stevens	20,292	20,408	2	*	0	*
Thurston	107,094	111,406	19	17.7	24	21.5
Wahkiakum	1,902	1,898	0	0.0	1	*
Walla Walla	28,869	27,831	2	*	6	21.6
Whatcom	87,427	89,873	28	32.0	37	41.2
Whitman	21,120	20,580	2	*	5	24.3
Yakima	113,567	113,933	93	81.9	105	92.2
<b>STATE TOTAL</b>	<b>3,072,231</b>	<b>3,095,569</b>	<b>1,582</b>	<b>51.5</b>	<b>1,229</b>	<b>39.7</b>

\*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON**  
**STD MORBIDITY REPORT - 2004**  
**REPORTED CHLAMYDIA CASES AND INCIDENCE RATES**  
**BY AGE (15-24 YEARS) AND COUNTY**

**Table 2**

COUNTY	2004 POPULATION		CHLAMYDIA			
	15-19	20-24	15-19	RATE/100,000	20-24	RATE/100,000
Adams	1,504	1,176	8	531.9	9	765.3
Asotin	1,507	1,190	13	862.6	18	1,512.6
Benton	12,582	9,518	119	945.8	177	1,859.6
Chelan	5,256	4,000	53	1,008.4	66	1,650.0
Clallam	4,468	3,107	65	1,454.8	56	1,802.4
Clark	27,372	24,077	263	960.8	323	1,341.5
Columbia	290	200	3	*	4	*
Cowlitz	6,889	5,736	88	1,277.4	93	1,621.3
Douglas	2,691	1,935	26	966.2	35	1,808.8
Ferry	682	343	3	439.9	9	2,623.9
Franklin	5,177	4,598	61	1,178.3	76	1,652.9
Garfield	202	79	0	0.0	0	0.0
Grant	6,770	5,530	88	1,299.9	88	1,591.3
Grays Harbor	5,205	3,822	75	1,440.9	68	1,779.2
Island	4,871	4,938	53	1,088.1	85	1,721.3
Jefferson	1,547	921	15	969.6	10	1,085.8
King	110,321	129,520	1,652	1,497.4	1,783	1,376.6
Kitsap	17,502	16,724	211	1,205.6	298	1,781.9
Kittitas	3,414	5,984	26	761.6	52	869.0
Klickitat	1,430	840	16	1,118.9	14	1,666.7
Lewis	5,617	4,050	83	1,477.7	63	1,555.6
Lincoln	710	336	4	*	3	*
Mason	3,551	2,755	37	1,042.0	56	2,032.7
Okanogan	3,083	1,962	50	1,621.8	42	2,140.7
Pacific	1,383	814	17	1,229.2	8	982.8
Pend Oreille	871	413	5	574.1	6	1,452.8
Pierce	55,517	54,636	901	1,622.9	1,087	1,989.5
San Juan	752	466	11	1,462.8	5	1,073.0
Skagit	8,248	6,609	114	1,382.2	131	1,982.1
Skamania	766	440	12	1,566.6	5	1,136.4
Snohomish	45,645	41,098	504	1,104.2	646	1,571.9
Spokane	33,549	33,730	354	1,055.2	459	1,360.8
Stevens	3,355	1,688	16	476.9	23	1,362.6
Thurston	16,515	15,081	181	1,096.0	213	1,412.4
Wahkiakum	256	140	0	0.0	0	*
Walla Walla	4,934	5,426	35	709.4	70	1,290.1
Whatcom	14,582	19,116	144	987.5	198	1,035.8
Whitman	5,039	10,403	39	774.0	88	845.9
Yakima	18,835	16,422	354	1,879.5	353	2,149.6
<b>STATE TOTAL</b>	<b>442,888</b>	<b>439,823</b>	<b>5,699</b>	<b>1,286.8</b>	<b>6,720</b>	<b>1,527.9</b>

\*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON  
STD MORBIDITY REPORT - 2004  
REPORTED STD CASES AND INCIDENCE RATES  
BY DISEASE AND COUNTY**

**Table 5**

2004		CHLAMYDIA			GONORRHEA		
COUNTY	POPULATION	CASES	RATE/100,000	RANK	CASES	RATE/100,000	RANK
Adams	16,700	24	143.7	32	3	*	
Asotin	20,700	41	198.1	28	2	*	
Benton	155,100	406	261.8	13	19	12.3	20
Chelan	68,400	169	247.1	19	2	*	
Clallam	65,900	151	229.1	25	8	12.1	21
Clark	383,300	891	232.5	24	191	49.8	5
Columbia	4,100	9	219.5	26	0	0.0	
Cowlitz	95,300	235	246.6	20	51	53.5	4
Douglas	34,200	85	248.5	18	2	*	
Ferry	7,300	14	191.8	29	0	0.0	
Franklin	57,000	192	336.8	4	7	12.3	19
Garfield	2,400	0	0.0		0	0.0	
Grant	78,300	234	298.9	7	15	19.2	12
Grays Harbor	69,200	189	273.1	11	4	*	
Island	74,800	177	236.6	22	14	18.7	13
Jefferson	27,000	37	137.0	34	3	*	
King	1,788,300	5,336	298.4	8	1,267	70.8	2
Kitsap	239,500	672	280.6	9	70	29.2	9
Kittitas	35,800	94	262.6	12	3	*	
Klickitat	19,300	41	212.4	27	8	41.5	6
Lewis	70,700	196	277.2	10	13	18.4	14
Lincoln	10,200	8	78.4	37	1	*	
Mason	50,800	119	234.3	23	5	9.8	22
Okanogan	39,600	133	335.9	5	6	15.2	17
Pacific	21,000	33	157.1	31	1	*	
Pend Oreille	11,900	14	117.6	35	1	*	
Pierce	744,000	2,687	361.2	2	452	60.8	3
San Juan	15,100	21	139.1	33	0	*	
Skagit	108,800	327	300.6	6	20	18.4	15
Skamania	10,100	19	188.1	30	2	*	
Snohomish	644,800	1,634	253.4	16	166	25.7	10
Spokane	432,000	1,101	254.9	15	152	35.2	8
Stevens	40,700	44	108.1	36	2	*	
Thurston	218,500	552	252.6	17	43	19.7	11
Wahkiakum	3,800	3	*		1	*	
Walla Walla	56,700	138	243.4	21	8	14.1	18
Whatcom	177,300	462	260.6	14	65	36.7	7
Whitman	41,700	147	352.5	3	7	16.8	16
Yakima	227,500	1,002	440.4	1	198	87.0	1
<b>STATE TOTAL</b>	<b>6,167,800</b>	<b>17,637</b>	<b>286.0</b>	<b>671</b>	<b>2,812</b>	<b>45.6</b>	

\*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON  
STD MORBIDITY REPORT - 2004  
REPORTED STD CASES AND INCIDENCE RATES  
BY DISEASE AND COUNTY**

**Table 5 (continued)**

2004		PRIMARY & SECONDARY	EARLY LATENT	LATE LATENT	TOTAL ALL SYPHILIS	INITIAL HERPES	RATE/100,000
COUNTY	POPULATION						
Adams	16,700	0	0	0	0	3	*
Asotin	20,700	0	0	0	0	9	43.5
Benton	155,100	0	0	3	3	40	25.8
Chelan	68,400	0	0	2	2	27	39.5
Clallam	65,900	1	1	1	3	24	36.4
Clark	383,300	2	2	0	4	42	11.0
Columbia	4,100	0	0	0	0	0	0.0
Cowlitz	95,300	0	0	3	3	18	18.9
Douglas	34,200	0	0	1	1	8	23.4
Ferry	7,300	0	0	0	0	3	41.1
Franklin	57,000	0	0	0	0	11	19.3
Garfield	2,400	0	0	0	0	0	0.0
Grant	78,300	0	0	0	0	30	38.3
Grays Harbor	69,200	0	0	2	2	10	14.5
Island	74,800	1	0	1	2	35	46.8
Jefferson	27,000	0	0	0	0	11	40.7
King	1,788,300	123	39	65	227	700	39.1
Kitsap	239,500	4	4	3	11	54	22.5
Kittitas	35,800	0	0	0	0	8	22.3
Klickitat	19,300	0	0	0	0	3	*
Lewis	70,700	0	0	0	0	19	26.9
Lincoln	10,200	0	0	0	0	1	*
Mason	50,800	1	0	6	7	14	27.6
Okanogan	39,600	0	0	1	1	12	30.3
Pacific	21,000	0	0	0	0	3	*
Pend Oreille	11,900	0	0	0	0	4	*
Pierce	744,000	7	1	14	22	194	26.1
San Juan	15,100	0	0	0	0	5	*
Skagit	108,800	1	0	0	1	84	77.2
Skamania	10,100	0	0	0	0	3	29.7
Snohomish	644,800	8	2	14	24	286	44.4
Spokane	432,000	0	0	5	5	172	39.8
Stevens	40,700	0	0	0	0	6	14.7
Thurston	218,500	2	0	2	4	70	32.0
Wahkiakum	3,800	0	0	0	0	1	*
Walla Walla	56,700	0	0	0	0	23	40.6
Whatcom	177,300	0	0	3	3	87	49.1
Whitman	41,700	0	0	0	0	8	19.2
Yakima	227,500	0	2	9	11	125	54.9
<b>STATE TOTAL</b>	<b>6,167,800</b>	<b>150</b>	<b>51</b>	<b>135</b>	<b>336</b>	<b>2,153</b>	<b>34.9</b>
		<b>Rate: 1.3</b>	<b>Rate: 0.8</b>	<b>Rate: 0.0</b>	<b>**Rate: 5.4</b>		

\*Rates are not calculated from 0 to 4 cases because they are unreliable.



## Appendix

### References

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